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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,050	03/09/2007	Frederic Jean-Pierre Demole	06-299	5410
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EXAMINER				
BONZELL, PHILIP J				
ART UNIT		PAPER NUMBER		
3644				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/578,050

Applicant(s)

DEMOLE, FREDERIC JEAN-PIERRE

Examiner

PHILIP J. BONZELL

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15, 16 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 15, 16 and 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because in figures 1-6, there are reference numbers (10, 20, and 30) that are not directed to the drawing; in figures 5 and 6, there are more than one drawings in the figures, these need to be separated into its own figure; and for figure 7, there is a circular object at the top of the figure, it is not known what this is suppose to be and as a result the Examiner has disregarded it. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 23 and 24 objected to because of the following informalities: they depend on Claim 17 which was cancelled; as a result the Examiner has taken them to be dependent on Claim 15. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. For Claim 15, the phrase "the pulling force of the cable being applied to the rocket at points located on the rocket away from that particular point that is located on the rocket the most at the front of the front part of the rocket" is indefinite as it is not clear where the points are.

b. For Claim 16, the phrase "pulling force to the rocket at points located on the rocket away from that particular point that is located on the rocket the most at the front of the front part of the rocket" is indefinite as it is not clear where the points are.

4. Claim 16 recites the limitation "the cable" in line 24. There is insufficient antecedent basis for this limitation in the claim as more than one cable is previously mentioned.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 15, 18-21, 23-25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demole (WO01/62594) in view of Ongaro (US Patent #3088698).
- c. For Claims 15, 23, and 24, figure 1 and claim 1 of Demole '594 discloses, "a payload launching system comprising a cable (17), an end portion of which is adapted for releasably coupling with a load (11), a rotary member (12) adapted for rotation on an axis (13) and drive means (15) for disengageably engaging with the rotary member (12) so as to rotate the rotary member (12) on the axis (13), and the rotary member (12) is provided with a surface (16) for receiving a portion of the cable (17) remote from the load (11), and the surface (16) has a curved profile, the radial dimension of which increases progressively from the said axis (13) in an arcuate direction of the said axis (13), characterised in that there is provided means for engaging a portion of the said cable (17) remote from the load (11) with the said rotary member (12), while the said rotary member (12)

is rotating, so that the portion of the said cable (17) remote from the load (11) locates on the said surface (16) while an end portion of the said cable (17) remote from the load (11) is restrained at a location on the rotary member (12) adjacent to a centre of the rotary member (12)". While figure 2 of Demole '594 discloses a single point at the front of the vehicle where the cable is attached to pull on the load, it is silent about that load being a rocket and having multiple points at which it is pulling on the rocket. Figures 1 and 4 of Ongaro '698 teach a rocket launching system wherein the load from the cable is spread out over multiple areas over the rocket (2) through a transferring means (26). Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Demole '594 with launching a rocket with a cable system and distributing the pull of the cable over multiple points on the rocket as taught in Ongaro '698 in order to launch a rocket vertically without creating too much stress on the rocket itself.

d. For Claims 18-20, Demole '594 is silent about the transferring means transferring the force to a point low on the spacecraft, however, figure 4 of Ongaro '698 teaches transferring the force near the bottom of the rocket which would be after the first and second stage as well as the payload. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Demole '594 with the transferring mean position of Ongaro '698 in order to reduce stress on the rocket near the most critical portion of the rocket, the payload.

- e. For Claim 21, Demole '594 is silent about means to disconnect the transferring means (26) from the cable, however, figures 4 and 7 of Ongaro '698 teaches wheels (36) on the cable (22) which would come off at the end of the cable. Therefore it would have obvious to someone of ordinary skill in the art at the time of the invention to modify Demole '594 with the disconnecting means of Ongaro '698 in order to release the transferring means from the cable so that the launching means would not be destroyed if the transferring means stays connected to the rocket.
- f. For Claims 25, and 27, Demole '594 is silent about means for disconnecting the cable from the transferring means, however, figure 4 of Ongaro '698 teaches the transferring means (26) is not permanently connected to the rocket (6) and therefore can and will disconnect once the rocket is launched. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Demole '594 with the transferring means of Ongaro '698 in order to allow the rocket to fly away.
6. Claim 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Demole (WO01/062594) in view of Ongaro (US Patent #3088698) and Larson (US Patent #6666159).
- g. Figure 2 and claim 4 of Demole '594 discloses, " a cable (26), an end portion of which is adapted for releasably coupling with a load (21), a rotary member (22) adapted for rotation on an axis (23) and drive means (24) for

disengageably engaging with the rotary member (22) so as to rotate the rotary member (22) on the axis (23), and an additional rotary member (25) adapted for rotation on a second axis, and an end portion of the said cable (26) remote from the load (21) is attached to the additional rotary member (25), and a second cable (27), an end portion of which is attached to the additional rotary member (25), and the rotary member (22) is provided with a surface (28) for receiving a portion of the said cable (27) remote from the additional rotary member (25), and the surface (28) has a curved profile, the radial dimension of which increases progressively from the said axis (23) in an arcuate direction of the said axis (23), characterised in that there is provided means for engaging a portion of the said cable (27) remote from the additional rotary member (25) with the said rotary member (22), while the said rotary member (22) is rotating, so that the portion of the said cable (27) remote from the additional rotary member (25) locates on the said surface (28) while an end portion of the said cable (27) remote from the additional rotary member (25) is restrained at a location on the rotary member (22) adjacent to a centre of the rotary member (22)." Demole '594 is silent about using a cable system to vertically launch a rocket, however, figure 1 and 4 of Ongaro '698 teaches a cable system to launch a rocket. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Demole '594 with the rocket as taught in Ongaro '698 as any payload could be launched with the device.

- h. Demole '594 discloses a pulling force in the front of the aircraft in figure 2 and Ongaro '698 teaches the force pulling the rocket from the bottom and spread out over multiple position but neither teach the pulling force away from the base of the rocket. While this idea would be an obvious design choice and movement of parts a front mounted multiple position force device is well know and used in many vehicle application including in figure 1 of Larson '159 where a multiple force position brace (100) is used. Therefore it would have been obvious to someone of ordinary skill in the art to modify Demole '594 and Ongaro '698 with the front mounted force transferring means as taught in Larson '159 in order to reduce the amount of cable or transferring means structure and thus reducing the weight of the system.
7. Claims 22, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demole (WO01/062594) in view of Ongaro (US Patent #3088698) as applied to claim15 above, and further in view of Lee (US Patent #2941764).
- i. For Claims 22 and 26, Demole '594 and Ongaro '698 are silent about the use of explosives to disconnect the transferring means, however, figure 1 of Lee '764 teaches explosive bolts (33) that disconnect the parts of the rocket (10). Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Demole '594 and Ongaro '698 with the means for using explosive bolt to disconnect as it is a safe and well tested technology that is used in many spacecrafts and satellites.

j. For Claim 28, Demole '594 and Ongaro '698 are silent about what is disconnecting being aerodynamic so as to move away from the rocket, however, figure 1 of Lee '764 teaches that each of the parts is aerodynamic so as to move away from each other. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Demole '594 and Ongaro '698 with the aerodynamic structures as taught in Lee '764 in order to allow for easier movement away from each other.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHILIP J. BONZELL whose telephone number is (571)270-3663. The examiner can normally be reached on M-Th 8-5;.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. J. B./
Examiner, Art Unit 3644

/Michael R Mansen/
Supervisory Patent Examiner, Art Unit 3644

pjb